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Concl

shifted to a lower frequency from its expected frequency location if the sampling frequency f_s is too high. Conversely, in the case where the sampling frequency f_s is too low, the pilot signal will appear to have been shifted to a higher frequency location from its expected frequency location in the spectrum.

In the Claims:

Please amend claim 10 and add new claims 105-110 as follows:

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sub D17

10. (Amended) A digital communication system comprising:
a front end receiving an input spectrum at an intermediate frequency, the input spectrum including an inserted predetermined frequency component;
first and second nested tracking loops, the first loop acquiring carrier frequency lock in operative response to the predetermined frequency component of the received spectrum, the second loop providing a signal adapted to position the spectrum at a predetermined location relative to baseband in operative response to said predetermined frequency component; and
a third tracking loop coupled to define a symbol timing parameter in operative response to said predetermined frequency component.

105. (New) The communication system of claim 10, in which the front end has a signal path comprising in the order recited a first signal mixer, a signal sampler, a second signal mixer, and an equalizer, the first signal mixer lying in the first loop, the second signal mixer lying in the second loop, and the signal sampler lying in the third loop.

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cont sub D27

106. (New) The communication system of claim 105, in which the first and second loops each have a controllable oscillator and a single phase detector for adjusting both oscillators responsive to the output of the second mixer.

107. (New) The communication system of claim 106, in which the first loop has a wide bandwidth to acquire carrier frequency lock and the second loop has a narrow bandwidth to track carrier frequency after carrier frequency lock.